Local File Transfer Commands

Category: File Transfers

DRAFT

This article is being reviewed for completeness and technical accuracy.

The following file transfer commands can be used when both the source and destination locations are accessible on the same host where the command is issued. Basic information about each command is provided below.

- **cp**:

  cp is a UNIX command for copying files between two locations (for example, two different directories of the same filesystem or two different filesystems such as NFS, CXFS or Lustre).

  - *Where is it installed at NAS?*

    cp is available on all NAS systems except SFE[1,2], DMZFS[1,2], Bouncer and Bruiser.

  - *Examples:*
    ```
    pfe1% cp $HOME/foo $HOME/newdir/foo2
    pfe1% cp $HOME/foo /nobackup/username
    ```

- **cxfscp**:

  cxfscp is a program from SGI for quickly copying large files to and from a CXFS filesystem (for shared-memory systems such as Columbia). It can be significantly faster than cp on CXFS filesystems since it uses multiple threads and large direct I/Os to fully utilize the bandwidth to the storage hardware.

  For files less than 64 kilobytes in size, which will not benefit from large direct I/Os, cxfscp will use a separate thread for copying these files using buffered I/O similar to cp.

  - *Where is it installed at NAS?*

    cxfscp is installed on cfe2, c21-24, Lou[1-2], and the Pleiades bridge nodes (bridge[1-2]). It is not available on the Pleiades front-end nodes (pfe[1-12]).

- ♦ *When to use it?*

  The Columbia CXFS filesystems (/nobackup[1-2][a-i]) are mounted on all Columbia hosts (cfe2, c21-24), Lou[1-3], and the Pleiades bridge nodes (bridge[1,2]). The command cxfscp can be issued on any of these hosts to copy large files to and from Columbia's /nobackup[1-2][a-i]. This is an easy way to transfer files among Columbia, Pleiades and Lou without the need for scp, bbftp or bbscp.
- ♦ *Examples:*
  ```
  cfe2% cxfscp /nobackup2a/username/foo /nobackup2a/username/new_dir
  lou2% cxfscp /nobackup2a/username/foo $HOME
  bridge2% cxfscp $HOME/foo /nobackup2a/username
  bridge2% cxfscp /nobackupp20/username/foo /nobackup2a/username
  ```
- ♦ *Performance:*

  Some benchmarks done by NAS staff show that cxfscp is typically 4 - 7 times faster than cp for large files (2+ GB) and can achieve upto 400 MBytes/sec.

  For more information, read **man cxfscp**.

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